

UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF TENNESSEE  
NASHVILLE DIVISION

## **MEMORANDUM**

This lawsuit arises from an alleged misrepresentation by Defendant as to the amount of ozone generated by their Honeywell F300 air cleaners. As a result of the misrepresentation and the high ozone concentration in Plaintiffs' home, Shelia Bearden ostensibly endured health problems.

Pending before the Court are motions filed by the parties to exclude expert testimony in this case, including, Defendant's *Motion to Exclude Plaintiffs' Proposed Expert Testimony of Dr. Richard Parent, PhD* (Docket Entry No. 299), Defendant's *Motion to Exclude Plaintiffs' Proposed Expert Testimony of Mr. Patrick Rafferty, CIH* (Docket Entry No. 301), and Plaintiffs' *Motion to Exclude Testimony of Dr. David MacIntosh* (Docket Entry No. 303). The motions have been fully briefed by the parties. On May 28, 2015, the Court heard oral argument and, for the reasons discussed herein, the Court will deny the motions.

## **L. APPLICABLE LAW**

The parties each challenge the admissibility of the opposing party's expert testimony under Rule 702 of the Federal Rules of Evidence and *Daubert v. Merrell Dow Pharmaceuticals*,

*Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). Rule 702 of the Federal Rules of Evidence governs the admissibility of expert testimony:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed.R.Evid. 702. The trial judge must act as a gatekeeper, admitting only that expert testimony that is relevant and reliable. *Daubert*, 509 U.S. at 589, 113 S.Ct. 2786. With regard to scientific knowledge, the trial court must initially determine whether the reasoning or methodology used is scientifically valid and is properly applied to the facts at issue in the trial. *Id.* To aid the trial court in this gatekeeping role, the Supreme Court has listed several key considerations: (1) whether the scientific knowledge can or has been tested; (2) whether the given theory or technique has been published or been the subject of peer review; (3) whether a known error rate exists; and (4) whether the theory enjoys general acceptance in the particular field. *Id.* at 592-94, 113 S.Ct. 2786. The Court's focus "must be solely on principles and methodology, not on the conclusions that they generate." *Id.* at 595, 113 S.Ct. 2786. "[T]he test under *Daubert* is not the correctness of the expert's conclusions but the soundness of his methodology." *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311 (9th Cir. 1995).

Although *Daubert* centered around the admissibility of scientific expert opinions, the trial court's gatekeeping function applies to all expert testimony, including that based upon specialized or technical, as opposed to scientific, knowledge. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147-48, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999); *Berry v. City of Detroit*, 25 F.3d

1342, 1350 (6th Cir. 1994). The trial court's objective "is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire*, 526 U.S. at 152, 119 S.Ct. 1167. The trial judge enjoys broad discretion in determining whether the factors listed in *Daubert* reasonably measure reliability in a given case. *Id.* at 153, 119 S.Ct. 1167. The party proffering the expert testimony bears the burden of showing its admissibility under Rule 702 by a preponderance of the evidence. *Daubert*, 509 U.S. at 592 n. 10, 113 S.Ct. 2786. With this framework in mind, the Court will now address the instant motions.

## II. ANALYSIS

### A. Motion to Exclude Richard Parent, PhD

Defendant moves the Court to exclude the opinions of Plaintiffs' expert Richard Parent, PhD ("Dr. Parent"). As grounds, Defendants contends Dr. Parent's opinions are not based on sufficient facts or data, his testimony is not the product of reliable principles or methods, he has not reliably applied the principles and methods to the facts of this case, and he is not qualified to render the opinions he offers. Plaintiffs oppose the motion, arguing Dr. Parent's opinions satisfy the requirements of *Daubert* and are admissible.

Dr. Parent is a board certified toxicologist with over 12 years' experience in the field of industrial toxicology and an additional 27 years' experience in litigation support for both the plaintiff and defense. He has testified in local and federal courts as an expert in toxicology and has given expert testimony in the disciplines of toxicology and chemistry. During his career, Dr. Parent has spent 10 years in research on organic chemicals at American Cyanamid Company. In the field of toxicology, he has initiated and carried out an active program in product safety

relating to toxicology for the Xerox Corporation. He has directed two contract toxicology laboratories: Food and Drug Research Laboratories, Inc. and Gulf South Research Institute, Life Sciences Division. In 1984, Dr. Parent established Consultox, Limited, a toxicology consulting firm, and has since consulted in product safety for various industries and has designed toxicology studies to assess the safety of materials being considered for use in a variety of products. For litigants, he has provided toxicological support and has addressed causation issues for the plaintiff as well as the defense. Dr. Parent is board certified by the American Board of Toxicology, the Academy of Toxicological Sciences, and the Regulatory Affairs Professional Society. He is a recognized expert in toxicology in France and the European Community. *See* (Docket Entry No. 292-14).

As an initial matter, the Court finds that Dr. Parent is qualified, under Rule 702, to offer testimony regarding testing he conducted and its results. The Court finds that Dr. Parent is an expert qualified to testify in this matter based upon his knowledge, skill, experience, and education.

*Daubert* requires that expert testimony be based upon sufficient facts or data. In his report, Dr. Parent identifies several items he relied upon in forming his opinions, including but not limited to, Air Quality Testing by Air Quality Research from December 11, 2008, to June 9, 2009; Home Advice Report by CC Dickson Company, test period February 11 – February 17, 2009, prepared by Daryl Bennett; Doc Air “Indoor Air Quality (IAQ) and Building Systems Evaluation Report Including Proposal for Building Improvements – Bearden Residence” November 6, 2008, by Barry C. Westbrook CIH; Honeywell Owners Guide, F50F and F300E Electronic Air Cleaners; Letter from Dr. G. Brent Hager to Mr. and Mrs. Bearden from Metro Public Health Department, Nashville, Tennessee, August 14, 2009; Deposition of Keegan Smith;

Deposition of John Benitez; Medical Records of Sheila Ann Bearden from January 10, 2008, to January 24, 2011; and numerous peer-reviewed publications describing the toxic effects of ozone and ozone reaction products within the house environment. *See* (Docket Entry No. 292-14). Based upon this information, the Court finds Dr. Parent's opinions are sufficiently grounded in the facts and data related to this litigation.

As to Dr. Parent's methodology, Defendant argues that instead of applying the science of toxicology, Dr. Parent reaches his general causation opinion by applying the "Hill criteria." Critically for this case (Defendant contends), Sir Austin Bradford Hill's "guidelines are employed only *after* a study finds an association to determine whether that association reflects a true causal relationship." Michael D. Green, et al., *Reference Guide on Epidemiology, in Reference Manual on Scientific Evidence* 598–99 (Federal Judicial Center, 3d ed. 2011) (emphasis in original). Because Dr. Parent fails to show the necessary association, Defendant purports his methodology is not reliable and his testimony must be excluded from evidence. *See* (Docket Entry No. 300 at 13-14). As to his opinion on causation,<sup>1</sup> Defendant makes a similar argument in addition to criticizing Dr. Parent's reliance on epidemiologic studies (opposed to controlled studies). (*Id.* at 19).

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<sup>1</sup> With regard to causation, Defendant also argues that Dr. Parent is admittedly unable to diagnose medical conditions or patient symptoms, he should not be allowed to opine as to the existence or cause of Sheila Bearden's alleged respiratory symptoms. Plaintiffs counter, Dr. Parent included in his report a consideration of the relationship between exposure and Mrs. Bearden's symptoms and excluded potential confounders; a classic differential diagnoses. (Parent Report, Dkt. No. 292-14 at 12-17). This Circuit has adopted the Third Circuits approach to differential diagnoses, moreover, which in turn recognizes that toxicologists as well as physicians can provide such diagnoses. *See, Best v. Lowe's HomeCenters, Inc.*, 563 F.3d 171 at 179 (6th Cir. 2009) (adopting the approach to differential diagnoses set out in *In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717 (3d Cir. 1994)). *See* (Docket Entry No. 326 at 14, fn 3).

Plaintiffs insist that Dr. Parent has indeed shown the necessary association – “the medical conditions reported by Mrs. Bearden – wheezing, bronchitis, burning of the chest, coughing and throat irritation – have all been linked to ozone exposure.” According to Plaintiffs, in a recent publication entitled the “Health Effects of Ozone in the General Population,” the EPA states that symptoms of ozone exposure include: “coughing,” “throat irritation,” “wheezing” and “pain, burning, or discomfort in the chest” – the very conditions suffered by Mrs. Bearden. Dr. Parent’s opinion that Mrs. Bearden’s symptoms were caused by her proven exposure to ozone ‘hardly takes this Court far out on a limb.’” The fact that all the conditions addressed by Dr. Parent can be caused by ozone exposure is uncontroversial. *See* (Docket Entry No. 326 at 4-5). Regarding Defendant’s criticism of Dr. Parent’s reliance on epidemiological studies, Plaintiff argues,

Honeywell seeks to explain away the epidemiological studies relied on by Parent and to focus this Court’s inquiry solely on controlled studies conducted in test chambers. But Honeywell’s monochromatic approach, while perhaps advantageous in this particular litigation, is not the approach recommended by federal environmental officials or Honeywell’s experts. The appropriate method of assessing levels of exposure that cause risk is that employed by Dr. Parent, which incorporates both controlled studies and longer duration epidemiological studies to obtain a balanced result.

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Honeywell’s reliance on studies that do not capture the effects of ozone on highly sensitive members of the population is a critical failure in analysis that significantly undermines its critique of Dr. Parent, whose analysis draws on epidemiological evidence that better address sensitive populations.

More generally, Dr. Parent’s conclusions are grounded in a mix of epidemiological and chamber studies, which is the mix favored by federal authorities.

(*Id.* at 8-10).

The Court’s focus “must be solely on principles and methodology, not on the conclusions that they generate.” *Daubert*, 595, 113 S.Ct. 2786. The question of whether Honeywell’s experts

or Dr. Parent use the more appropriate studies is a classic scientific dispute. The court's role, however, is not to determine which expert is correct. Based upon the foregoing, the Court finds that Defendant has not demonstrated that Dr. Parent should be excluded from testifying pursuant to Rule 702 or *Daubert*. Defendant may demonstrate the alleged deficiencies to the trier of fact through rigorous cross-examination. The jury should be permitted to hear the testimony and determine which expert's opinion is entitled to more weight. Accordingly, the motion will be denied.

**B. Motions to Exclude Mr. Patrick Rafferty and Dr. David MacIntosh**

The parties experts, both industrial hygienists, are equally opposed by the other side for similar issues. Therefore, the Court will conduct its analysis of these experts simultaneously.

Defendant moves the Court to exclude the opinions of Plaintiffs' expert Patrick Rafferty, ("Mr. Rafferty"). As grounds, Defendant contends Mr. Rafferty's testing methodology is flawed and his testimony does not "fit" the issues in this case. Plaintiffs oppose the motion, arguing Mr. Rafferty's opinions satisfy the requirements of *Daubert* and are admissible. Specifically, Plaintiffs' argue Defendant's motion attempts to place emphasis "on a few trees in the hope that the forest will be forgotten." (Docket Entry No. 324 at 4). Furthermore, "[w]hatever Honeywell's complaints about various aspects of [] Rafferty's testing may be, the do not change the fact that *Honeywell's own experts place [] Rafferty's test results at the center of their analysis.*" (*Id.*) (emphasis in original).

Plaintiffs move the Court to exclude the opinions of Defendant's expert David L. MacIntosh, Sc.D., C.I.H. ("Dr. MacIntosh"). As grounds, Plaintiffs contend Dr. MacIntosh has simply failed to provide information in his report that is "relevant to the task at hand." (Docket

Entry No. 307 at 1). Defendant opposes the motion, arguing Dr. MacIntosh's opinions satisfy the requirements of *Daubert* and are admissible.

Mr. Rafferty is certified in the Comprehensive Practice of Industrial Hygiene by the American Board of Industrial Hygiene, and has been designated a Certified Industrial Hygienist ("CIH") by that organization continuously since 1986. He is a Full Member of the American Industrial Hygiene Association ("AIHA") and for most of the past 23 years has been active in its Indoor Environmental Quality Committee, which includes sampling of indoor air contaminants within its purview. Mr. Rafferty has served on the executive leadership of that committee and has been an active committee member for many years. He has a Bachelor of Science degree in Chemistry from the University of Delaware and a Master of Science of Public Health degree in Environmental Chemistry and Biology from the University of North Carolina at Chapel Hill. Mr. Rafferty has conducted inspections and investigations of indoor air quality issues in hundreds of residences. In his former positions with two nation-wide environmental consulting firms, Roy F. Weston, Inc. (now Weston Solutions) and Clayton Environmental Consultants (now Bureau Veritas), Mr. Rafferty was responsible for training and quality assurance oversight of dozens of industrial hygienists with respect to indoor air quality inspection and sampling of air contaminants.

Dr. MacIntosh is the Chief Science Officer and Director of Advanced Analytics at EH&E in Needham, Massachusetts, and has over 20 years of experience in environmental and occupational health. He is responsible for ensuring the information gathering, analysis, and interpretation methods applied by EH&E scientists, engineers, and industrial hygienists are valid, reliable, and executed appropriately. Dr. MacIntosh's Advanced Analytics division provides a wide range of support to clients, with a focus on systems that support data driven decisions. His

professional experience includes detailed evaluations of the performance of over a dozen types of residential air cleaning systems, both in-duct and portable, through combinations of measurement programs, modeling analyses, technology assessments, and literature reviews. Dr. MacIntosh has published the findings from several of these studies in peer-reviewed scientific journals and conference proceedings. In addition to his position with EH&E, Dr. MacIntosh is an Adjunct Associate Professor of Environmental Health at the Harvard School of Public Health where he teaches a course to graduate students entitled *Fundamentals of Human Environmental Exposure Assessment* and contribute to research being conducted by doctoral degree candidates. Prior to joining EH&E, Dr. MacIntosh was a tenured faculty member at the University of Georgia. He earned a doctorate in Environmental Health from the Harvard School of Public Health and a M.S. and B.S. from Indiana University. Dr. MacIntosh is active in professional service through organizations such as the International Society for Exposure Science, the Centers for Disease Control and Prevention, and the World Health Organization.

The Court finds that both Mr. Rafferty and Dr. MacIntosh are experts qualified to testify in this matter based upon their knowledge, skill, experience, and education.

As the Court noted above, *Daubert* requires that expert testimony be based upon sufficient facts or data. In reaching his opinions, Mr. Rafferty relied, in part, on the following information: Owners' Guide: F50F and F300E Electronic Air Cleaners. Honeywell Publication No. 69-0756-05; Guide to Air Cleaners in the Home; US Environmental Protection Agency, Office of Air and Radiation, Indoor Environmental Division. Publication No. EPA – 402-F-08-004, May 2008; Interoffice Correspondence dated February 26, 2003 from Charles Bartlett, Honeywell Home and Building Control Engineering, to Tom Kensok, Re: "F50F Ozone Summary," (with attachments numbered 1, 2 & 3). Exhibit 18 to deposition of Marcus Stoner,

November 27, 2012; Videotaped deposition of Charles E. Bartlett, dated February 15, 2013; Deposition of James Bearden, Volume I, February 23-24, 2011; and Honeywell raw test dat[a] from Bearden residence, April 9-11, 2013.

In forming his opinion, Dr. MacIntosh considered, in part, the following information: measurements, logs, forms, photographs, and observations from the Bearden residence; Ozone Concentrations in Outdoor 2010-2013, Nashville metro area, U.S. Environmental Protection Agency; Expert Reports of Patrick Rafferty and Richard Parent, Consumer Reports, 2007, Air Purifiers: Filtering the Claims, BHWL009203-BHWL009207; Owner's Guides and Product Data for the F50 and F300 Series Electronic Air Cleaners; and the depositions of Charles Bartlett, James Bearden, Sheila Bennett, John Benitez, and Darryl Bennett.

Based upon this information, the Court finds that both Mr. Rafferty and Dr. MacIntosh's opinions are sufficiently grounded in the facts and data related to this litigation.

The Court next turns to the methodology employed by Mr. Rafferty and Dr. MacIntosh in forming their opinions. Methodology is the aspect of their opinions criticized most by the parties.

First, while Dr. MacIntosh's methods were significantly different than Mr. Rafferty's, one particular difference concerned the fan setting. The parties have challenged the mode in which the F300 air cleaners were in when tested – “on” or “continuous” v. “auto” or “intermittent” mode. Mr. Rafferty chose to test the air cleaners in “on” mode, according to the manufacturer's instructions. And according to Plaintiffs, Dr. MacIntosh concedes that the Beardens operated their air cleaners in continuous mode for at least a total of six weeks in Spring and Fall of 2008. (Docket Entry No. 307 at 6) (citing MacIntosh Report, Ex. Q, at 21).

In contrast, Dr. MacIntosh consulted his testing with the air cleaners in “auto” mode because this was the “fan setting that the Beardens typically used.” (Docket Entry No. 320 at 1). One reason for doing so was because Mr. Rafferty had already tested for ozone with the system running continuously. (MacIntosh Dep. at 72:5-9, 74:14-23). Dr. MacIntosh then calculated the amount of additional ozone actually experienced by the Beardens. For this, he used Mr. Rafferty’s findings. (Docket Entry No. 320 at 5). In the Beardens’ home, Dr. MacIntosh, after taking background readings, operated the Beardens’ electronic air cleaners from the afternoon of April 10, 2013 to the afternoon of April 11. (MacIntosh Depo., Ex. I at 214:18-21). Plaintiffs point the Court to the fact that the average outdoor temperature in Nashville during that period was 69 degrees. (Docket Entry No. 307 at 7). Given that the daily temperature in Nashville effectively matched the setting on the Beardens’ thermostat, it is hardly surprising that (according to Plaintiffs), in Dr. MacIntosh’s words, “I did the testing during the intermittent mode, and **I know from being there that the air cleaner – the HVAC system overall didn’t run that much.**” (MacIntosh Depo., Ex. I at 201:25-202:3). (*Id.*) (emphasis in original).

Next, the method used to collect the data is an issue of concern to the parties. Mr. Rafferty took his measurements in 10-second or one-minute snapshots. According to Defendant, the EPA and OSHA, among others, measure ozone based on at least an eight-hour average – and Mr. Rafferty’s method falls far below the scientifically recognized standards for acceptable ozone levels. According to Plaintiffs, while this is strongly criticized by Defendant, when asked in his deposition about the calculations, Dr. MacIntosh admitted that he has presented his own studies in five minute averages and other intervals.<sup>2</sup> (Docket Entry No. 307 at 15-16). Moreover, at his deposition, Dr. MacIntosh could not “identify a single study other than that

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<sup>2</sup> (MacIntosh Dep. at pp. 142-143).

conducted for this litigation in which he or any other expert presented his ozone test results in eight hour averages.” (*Id.*).

Another argument made by the parties is the calculations and averages of the data collected. Defendant asserts that Mr. Rafferty does not average any of his collected data. “Instead he simply reports the one-minute averages calculated by his measuring device; while providing little information regarding the distribution of data within his ranges.” (Docket Entry No. 302 at 9). Plaintiffs counter, the fact that Mr. Rafferty is not willing, like Honeywell engineers, to average concentrations across all tested homes in order to manipulate the ozone levels to 9 ppb – just under the represented wire – hardly diminishes the impact of his report. (Docket Entry No. 324 at 14). As Mr. Rafferty observed in his deposition, a multi-home average is hardly consolation to the homeowner in whose homes far higher levels are contributed, like Plaintiffs. (*Id.*) (citing Rafferty Depo. at 283:9-284:8). Nor does it change the fact that during Honeywell’s own testing, its air cleaners generated levels over background far in excess of the advertised limits. (*Id.*) (citing Rafferty Report, Ex. B, at p. 4-5).

In conjunction with the previous argument, Defendant contends that Mr. Rafferty overstates the ozone emissions. (Docket Entry No. 302 at 14). Even though “Mr. Rafferty’s findings are about the same as Honeywell’s disclosures, Plaintiffs may argue that they nonetheless show some readings higher than 10 ppb. Mr. Rafferty achieved those results, however, by applying a methodology that improperly maximized potential ozone measurements.” (*Id.*). Plaintiffs counter that Defendant’s statement “is just wrong.” (Docket Entry No. 324). Plaintiffs contends “[t]his Court can see for itself these figures set out on pages five to seven of his report.” (*Id.*) (citing Rafferty Report, Ex. B at 5-7). For instance, Mr.

Rafferty details for each Honeywell test home both the average ozone concentration above background and the peak concentration. (Rafferty Report, Ex. B at 5). (*Id.*).

Moreover, Plaintiffs argue Dr. MacIntosh concedes that Mr. Rafferty's report, like other "published papers and reports" he relies on, "has some strengths," and he places Mr. Rafferty's work at the center of his own exposure analysis. He nevertheless makes nit-pick criticisms of the testing he himself relies on – criticisms that simply do not hold up under scrutiny. (Docket Entry No. 307 at 1). According to Defendant, as a result of Mr. Rafferty's alleged deficiencies, Dr. MacIntosh opines that Mr. Rafferty overstates the actual ozone contribution of the F300s and that, when averaged to health-relevant time periods, even Mr. Rafferty's worst case measurements demonstrate ozone levels below 10 ppb. (Docket Entry No. 320 at 2)(citing MacIntosh Rep. at 15–16).

"Competing expert opinions present the 'classic battle of the experts and it is up to a jury to evaluate what weight and credibility each expert opinion deserves. *Phillips v. Cohen*, 400 F.3d 388, 399 (6th Cir. 2005) (quoting *Cadmus v. Aetna Cas. & Sur. Co.*, No. 95–5721, 1996 U.S.App. LEXIS 29443, at \*6 (6th Cir. Nov. 7, 1996)). This appears to be a battle of the experts, and the Court finds this statement of law to be applicable in this matter. "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Daubert*, 509 U.S. at 596, 113 S.Ct. 2786. The Court finds that, at this time, both Mr. Rafferty and Dr. MacIntosh's opinions satisfy the requirements of *Daubert* and are admissible at trial.<sup>3</sup> Consequently, the motions will be denied.

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<sup>3</sup> Defendant claims that Mr. Rafferty's testimony does not fit the facts in the case. (Docket Entry No. 302 at 4). Plaintiffs counter that "even if any or all of the criticisms [it] levels are true, they would merely speak to the weight to be assigned his testimony, not its admissibility." (Docket Entry No. 324 at 5). The Court must ensure that the proffered expert testimony is "sufficiently

### III. CONCLUSION

For all of the reasons stated, Defendant's *Motion to Exclude Plaintiffs' Proposed Expert Testimony of Dr. Richard Parent, PHD* (Docket Entry No. 299), Defendant's *Motion to Exclude Plaintiffs' Proposed Expert Testimony of Mr. Patrick Rafferty, CIH* (Docket Entry No. 301), and *Plaintiffs' Motion to Exclude Testimony of Dr. David MacIntosh* (Docket Entry No. 303) are hereby denied.

An appropriate Order shall be entered.

  
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KEVIN H. SHARP  
UNITED STATES DISTRICT JUDGE

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tied to the facts of the case that it will aid the jury in resolving a factual dispute." *Nelson v. Tenn. Gas Pipeline Co.*, 243 F.3d 244, 251 (6th Cir. 2001). To the extent Defendant disputes Mr. Rafferty's testimony, that is a matter that must be left to the jury.